

## **REMARKS/ARGUMENTS**

### **Status of the Claims**

Upon entry of the present amendment, claims 1-11 and 17-19 are pending. Claim 6 is amended to set forth isolating preadipocytes in the interest of consistency. No new matter is added by the present amendment, and the Examiner is respectfully requested to enter it.

### **Claim Objection**

The Examiner objected to claim 6 for reciting “isolating adipocytes” to establish “a primary culture of preadipocytes.” In response, Applicants have amended claim 6 as shown below:

6. (Currently Amended) A method of producing a population of primary cultured preadipocytes, wherein the method comprises the steps of:
- (1) isolating cells from adipose tissue adipocytes and establishing a primary culture of preadipocytes; and
  - (2) transferring into the preadipocytes a foreign DNA operably linked to a promoter sequence and encoding a protein that is secreted outside of the cell and then stably maintaining the foreign DNA in the genome of the preadipocytes.

### **Rejection under 35 U.S.C. § 102(e)**

The Examiner has rejected claims 1-5, 8-9, 17 and 18 under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent No. 7,015,037 (“Furcht”).

As the Examiner appreciates, proper anticipation requires that the cited reference teach each and every element of the rejected claim, either expressly or inherently.

According to the Examiner, there is no evidence that adipocytes established from adipose tissue are structurally or functionally different from those established from differentiated stromal mesenchymal stem cells. The Examiner alleges that Furcht, disclose multipotent adult stem cells (MASC) derived from bone marrow that can differentiate into bone marrow stromal cells and adipocytes. The Examiner concludes that the person of skill in the art would appreciate

that the cultured population of preadipocytes claimed is not materially different from the cultured MSCs and stromal cells of Furcht, as both are obtained by differentiation and culture of preadipocytes.

For the reasons detailed below and in the accompanying Declaration under 37 C.F.R. § 1.132 of Mr. Masayuki Aso, Applicants disagree with the Examiner's reasoning. This is because the claimed population of primary cultured preadipocytes are materially different from the cultured MSCs and stromal cells of Furcht.

The rejected claims require a population of preadipocytes that is "isolated and established from adipose tissue." The Examiner can not ignore this element of the claims. As has been discussed in the response filed on December 16, 2006, the cells established from adipose tissue (*i.e.*, the population of primary cultured preadipocytes, claimed in the present application) and cells differentiated from marrow-derived multipotent stem cells (*i.e.*, Furcht's MSCs and cells differentiated therefrom) are not identical and those skilled in the art would immediately understand that the Furcht's cells would not fall within the scope of the present application's claims.

To support this, the Applicants submit with the present response the Declaration under 37 C.F.R. § 1.132 of Mr. Masayuki Aso, providing experimental data demonstrating the difference in cell-surface antigen expression patterns between the claimed preadipocytes and Furcht's MSCs. The results are summarized in the Table below.

Cell surface antigen	Furcht's MSCs	Preadipocytes of the present invention
CD44 (hyaluronate receptor)	(-)*	(+)
Muc18 (also called CD146)	(-)*	(+)
CD36 (Fatty acid translocase)	(-)*	(+)

\*See, columns 5-6 of Furcht.

As the Examiner can see, whereas the preadipocytes that are isolated and established from adipose tissue are positive for the cell surface expression of CD44, Muc18 and

CD36, the MASCs of Furcht are negative for cell surface expression of CD44, Muc18 and CD36. Accordingly, from the data shown in the above Table, it is clear that the primary cultured preadipocytes isolated and established from adipose tissue are materially different from Furcht's MASCs.

Because the present population of primary cultured preadipocytes isolated and established from adipose tissue are materially different from the MASCs described by Furcht, this reference does not anticipate the present invention. No *prima facie* anticipation of the claims has been established. The Examiner does not show that cells differentiated from Furcht's MASCs are positive for the cell surface marker(s) of a preadipocyte cell. In view of the foregoing, the Examiner is respectfully requested to withdraw this rejection.

**Rejections under 35 U.S.C. § 103**

Claims 9-11 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Furcht in view of Crystal et al. and further in view of Baetge et al.

Claims 6-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Furcht in view of Hertz et al.

The Examiner has the burden of presenting a *prima facie* case of obviousness. For an invention to be obvious under 35 U.S.C. § 103(a) requires consideration of the factors set forth in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), including an analysis of the scope and content of the prior art and the differences between the claimed subject matter and the prior art. Indeed, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *See, KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), quoting *In re Kahn*, 441 F.3d 997, 988 (Fed. Cir. 2006)).

Here, Applicant's respectfully maintain that the Examiner's articulated reasons for alleged obviousness do not have sufficient rational underpinnings to support a legal conclusion of obviousness. No *prima facie* case of obviousness has been established.

In both of these rejections, Furcht is cited as the primary reference. For the reasons discussed above, Furcht fails to disclose “a population of primary cultured preadipocytes isolated and established from adipose tissue.” As summarized in the data shown in the above Table and in the Declaration under 37 C.F.R. § 1.132 of Mr. Masayuki Aso, the MASCs described by Furcht are materially different from the population of primary cultured preadipocytes of the present invention. Therefore, the combination of Furcht, Crystal, and Baetge necessarily results in a MASCs population that is materially different from the population of primary cultured preadipocytes of the present invention.

Because the combined disclosures of Furcht, Crystal, and Baetge arrive at a MASCs population that is materially different from the population of primary cultured preadipocytes of the present invention, they do not render the invention of claims 9-11 obvious.

Because the combined disclosures of Furcht and Hertzl arrive at a MASCs population that is materially different from the population of primary cultured preadipocytes of the present invention, they do not render the invention of claims 6-7 obvious.

Accordingly, the Examiner is respectfully requested to withdraw this rejection.

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Amdt. dated March 31, 2009  
Amendment under 37 CFR 1.116 Expedited Procedure  
Examining Group 1633

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**CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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